

**PATENT****REMARKS**

Claims 1-58 are pending in the present application, of which claims 1, 23, 27, 31, 35, 38, 45, 49, 52, 55 are independent. Claim 4 has been amended to correct a typographical error therein. Applicants believe that the present application is in condition for allowance, which prompt and favorable action is respectfully requested.

**I. OBJECTIONS TO THE CLAIMS**

Claim 4 has been objected to because of a missing "of" between "the computing" and "the correlation matrix." Applicants have corrected this typographical error and the objection is respectfully traversed.

**II. REJECTION UNDER 35 U.S.C. §102****A. Claims 1, 8, 16, 23, 31, 55**

The Examiner rejected claims 1, 8, 16, 23, 31, 55 under 35 U.S.C. §102(e) as being allegedly anticipated by U.S. Patent No. 6,868,133 (hereinafter "Hicks"). The rejection is respectfully traversed in its entirety.

Claim 1 recites, amongst other things, "obtaining a plurality of channel response matrices for a channel response of a MIMO channel" and "computing a correlation matrix for the MIMO channel based on the plurality of channel response matrices." Hicks discloses that "antenna elements 110 generate antenna data  $x_1, x_2, \dots, x_m, \dots, x_M$  in response to detecting signals  $p_d$ ." (Col. 2, ll. 41-43). The relationship between the antenna data,  $x[n]$ , and transmitted symbols is described as " $x[n] = A s[n] + [n]$ , where vector  $s[n] = [s_1[n] \ s_2[n] \ \dots \ s_D[n]]^T$  is a  $D \times 1$  vector of the  $n$ th symbol set transmitted by the signals, and  $s_d[n]$  is the symbol set transmitted by signal  $p_d$ ." (Col. 2, ll. 45-50). Further, the "matrix A is the composite array response for the signals, where the  $d$ th column of matrix A is the steering vector for the  $d$ th signal." (Col. 2, ll. 55-57). That is, matrix A is composed of the steering vectors for the signals that are transmitted to the antenna elements 110. In no instance, is there a description or explanation as to what information or processes are used to form matrix A. Therefore, for at least this reason claim 1, that

**PATENT**

recites "computing a correlation matrix for the MIMO channel based on the plurality of channel response matrices," is allowable over Hicks.

Claim 8 and 16 depends from claim 1, and are therefore allowable for at least the same reasons as stated with respect to claim 1.

Claim 23 recites, amongst other things, "a controller to compute a correlation matrix for the MIMO channel based on the plurality of channel response matrices." As discussed with respect to claim 1, there is no description or explanation as to what information or processes are used to form matrix A in Hicks. Therefore, claim 23 is allowable over Hicks for at least this reason.

Claim 31 includes recitations similar to claim 1 and is allowable for at least the same reasons as discussed with respect to claim 1.

Claim 55 recites, amongst other things, "computing a correlation matrix based on the set of channel response vectors." As discussed with respect to claim 1, there is no description or explanation as to what information or processes are used to form matrix A in Hicks. Therefore, claim 55 is allowable over Hicks for at least this reason.

### **III. ALLOWABLE CLAIMS**

Applicants respectfully thank the Examiner for allowance of claims 2-7, 9-15, 17-22, 24-30, 32-54, and 56-58.

**PATENT****REQUEST FOR ALLOWANCE**

In view of the foregoing, Applicant submits that all pending claims in the application are patentable. Accordingly, reconsideration and allowance of this application are earnestly solicited. Should any issues remain unresolved, the Examiner is encouraged to telephone the undersigned at the number provided below.

Respectfully submitted,

Dated: \_\_\_\_\_

By: \_\_\_\_\_  
Dmitry R. Milikovsky, Reg. No. 41,999  
(858) 845-0130

QUALCOMM Incorporated  
5775 Morehouse Drive  
San Diego, California 92121  
Telephone: (858) 658-5787  
Facsimile: (858) 658-2502